

ARMY OF THE FUTURE

23 JUNE 1998

GENERAL HARTZOG

GOOD MORNING, AND WELCOME. WHAT I'D LIKE TO SHOW YOU THIS MORNING IS A VISION OF WHERE THE UNITED STATES ARMY IS HEADED THROUGH OUR FORCE XXI EXPERIMENTATION PROCESS. I'LL SHOW YOU SOME OF THE INSIGHTS, TECHNOLOGIES AND THE RESULTING TRAINING CHALLENGES WE FACE IN THE FUTURE.

(X) THE FUTURE IS WHAT TRADOC IS ALL ABOUT. LET ME REMIND YOU OF

OUR MISSION: - PREPARE THE ARMY FOR WAR

 - BE THE ARCHITECT OF ITS FUTURE

 - ENSURE TRADOC'S CAPABILITY TO EXECUTE ITS MISSION

(X) THIS IS MY FAVORITE 1948 PLYMOUTH SHOCK ABSORBER. IT IS REPRESENTATIVE OF THE ARMY'S PATH OF CHANGE. WE ARE MOVING TOWARD A FUTURE THAT WE CAN ONLY CONJECTURE ABOUT -- WE ARE GUIDED BY A VISION AND WORKING TO A NEAR FUTURE OF ABOUT 2010. AT THAT POINT, ENABLED BY TECHNOLOGY, WE EXPECT TO HAVE FIELDDED ARMY XXI -- A LEGACY-PLUS ARMY WHICH WILL PROVIDE US THE MENTAL AGILITY TO MOVE FORWARD. AS WE MOVE ALONG OUR PATH OF CHANGE, WE ARE EMPLOYING SPIRAL DEVELOPMENT -- CONTINUALLY THINKING,

TESTING, ADAPTING, SO THAT WE WILL BE READY FOR THE FUTURE WHEN IT IS UPON US.

WE NOTED THAT OUR MOVEMENT INTO THE FUTURE WAS DONE WITH THE IMPERATIVES ALWAYS IN THE FOREFRONT. WE ARE CONVINCED THAT ONLY BY KEEPING A BALANCE IN TRAINING, FORCE MIX, DOCTRINE, MODERN EQUIPMENT, LEADER DEVELOPMENT, AND QUALITY PEOPLE CAN WE FIELD A FORCE THAT IS IN BALANCE -- TRAINED AND READY.

(X) TODAY I'D LIKE TO REMIND YOU OF THE CHANGING BATTLEFIELD THAT WE ENVISION, OUR FUTURE TRAINING CHALLENGES, AND TOUCH ON SOME IMPLICATIONS FOR THE ARMY AFTER NEXT.

(X) LET'S REMEMBER YESTERDAY'S BATTLEFIELD.

(X) LINEAR, AND DENSELY POPULATED WITH MEN AND EQUIPMENT, IT WAS DIVIDED INTO A DEEP , CLOSE, AND REAR AREAS.

(X) YOU CAN SEE HERE THE DIVISION'S BATTLE SPACE DIMENSIONS -- 100K DEEP, 80K WIDE. THE COLD WAR BATTLEFIELD HAD A KNOWN ENEMY. WE KNEW WHERE THE ENEMY WAS AND WHAT THE ENEMY WAS LIKE.

(X) WE HAD TIME TO PLAN AND TIME TO REHEARSE BEFORE WE EXECUTED. WHEN WE FOUGHT, WE FOUGHT IN LINEAR FASHION, MASSING MEN AND MATERIEL SHOULDER TO SHOULDER, HUB TO HUB. OUR OPERATIONS WERE ORGANIZED ON A FORWARD LINE OF TROOPS AND FORWARD EDGE OF BATTLE AREA. OUR DIVISIONS GROUND FORWARD CONSUMING THE TERRAIN, THE ENEMY, OVER TIME.

(X) TODAY'S BATTLEFIELD HAS EXPANDED -- WE NOW KNOW, BASED ON EXPERIMENTATION CONDUCTED AT THE DAWE, THAT THE BATTLE SPACE FOR ARMY XXI WILL BE 120K WIDE AND 200K DEEP.

(X) IT WILL EXTEND UPWARD TO ENCOMPASS THE INFORMATION NETWORK OF THE DIGITAL BATTLEFIELD. NOTICE THAT THIS BATTLE SPACE IS PORTRAYED AS A PURPLE BUBBLE -- AND WE DID THAT FOR A REASON. WE ARE SURE WE WILL BE SHARING IT WITH OUR JOINT PARTNERS.

THE BATTLE SPACE IS LARGER AND WILL SUPPORT A SMALLER FORCE. CLOSE, DEEP, AND REAR RELATIONSHIPS WILL BLUR, AND WE MUST BE PREPARED TO COUNTER ANY ENEMY ACTION FROM ANY DIRECTION WITHIN THE BATTLE SPACE. THE ENEMY ARROWS ARE A GUIDE FOR YOU AS I SHOW YOU WHAT MIGHT GO ON WITHIN THIS BATTLE SPACE.

(X) WHAT WE ARE SEEING ARE SIMULTANEOUS, INDEPENDENT BRIGADE OPERATIONS, IN-STRIDE TARGETING, VERTICAL AND HORIZONTAL CONNECTIVITY, AND OPERATING SYSTEMS THAT PROVIDE THE COHESION AND CONNECTIVITY TO WHAT WOULD APPEAR FROM THE OUTSIDE AS A VERY MESSY BATTLEFIELD.

(X) INSTEAD OF A LINEAR BATTLEFIELD, THE FUTURE PROMISES A KALEIDOSCOPE OF TACTICAL OPERATIONS. HOW DO WE CONTROL THIS KALEIDOSCOPE? WHO TURNS IT TO MAKE THE NEXT PATTERN? THE ANSWER IS THAT WE DO.

(X) THIS IS A SITUATIONAL AWARENESS SCREEN. MANY OF YOU ARE VERY FAMILIAR WITH THIS. MANY ARE NOT. THIS IS WHAT IT LOOKS LIKE TODAY. IT IS REAL AND WITHIN THE 4TH INFANTRY DIVISION AT FORT HOOD, TEXAS. LET ME SHOW YOU THE CAPABILITIES OF THIS SYSTEM. ONE OF THESE SCREENS WAS IN THE DIVISION COMMANDER'S TOC, WHILE OTHERS WERE IN EACH BRIGADE COMMANDER'S TOC.

(X) THE FBCB2 PORTRAYS THE ACTUAL LOCATIONS OF ENEMY AND FRIENDLY FORCES AND SERVES AS A PRIMARY CONDUIT OF TACTICAL INFORMATION. IT IS A GPS BASED SYSTEM -- DISCRETE SIGNALS FROM EACH VEHICLE. IT CAN ALSO BE USED AS A PLANNING TOOL ALLOWING EVERYONE TO SEE THE SAME THINGS AT THE SAME TIME. NOW, HOW DOES IT WORK?

(X) USING JOHN MADDEN LIGHT PEN TECHNOLOGY, TODAY, THE DIVISION COMMANDER CAN IDENTIFY AN OBJECTIVE ON HIS SCREEN AND HAVE THAT OBJECTIVE APPEAR SIMULTANEOUSLY ON ALL HIS SUBORDINATE COMMANDERS' SCREENS IN A SIMULTANEOUS DISCUSSION.

(X) HAVING RECEIVED THAT INFORMATION, THE BRIGADE COMMANDER CAN PROPOSE A COURSE OF ACTION. IT WILL APPEAR SIMULTANEOUSLY ON THE DIVISION COMMANDER'S SCREEN.

(X) THE DIVISION COMMANDER PROPOSES AN ALTERNATE COURSE OF ACTION

(X) WHICH IS SIMULTANEOUSLY DISPLAYED ON THE BRIGADE COMMANDER'S SCREEN. IN THE PAST, THE STAFF WOULD THEN TAKE THESE PROPOSED COURSES OF ACTION AND USE STAFF ESTIMATES AND THEIR BEST GUESS AT

THE SITUATION TO DECIDE WHICH ALTERNATIVE WAS BEST. TODAY, COMMANDERS HAVE THE OPPORTUNITY TO SEE FOR THEMSELVES.

(X) USING THE UAV, THE COMMANDERS ARE ABLE TO LOOK, IN THIS CASE, AT THE AIRFIELD AND GATHER REAL TIME IN-STRIDE TARGETING DATA NECESSARY FOR THE PREPARATION AND PLANNING OF AN OPERATION. (the wheel is the end of the UAV feed)

(X) WITH THIS INFORMATION, THE DIVISION COMMANDER IS ABLE TO DECIDE ON HIS COURSE OF ACTION WITHOUT LABORIOUS STAFF PREPARATION. HIS DECISION IS TRANSMITTED INSTANTANEOUSLY.

(X) NOW SOME OF YOU MAY SAY THAT THIS IS AN IMPERSONAL WAY TO DO OUR BUSINESS, A BUSINESS WHICH FOR CENTURIES HAS RELIED UPON THE COMMANDER'S PRESENCE.

WHEN THE DIVISION COMMANDER MAKES HIS DECISION, HE IS NOT MERELY DOING IT BY WRITING WORDS ON THE SCREEN, HE IS DOING IT FACE TO FACE WITH HIS SUBORDINATE LEADERS EITHER ON THE GROUND OR BY VTC.

(X) BUT COMMANDERS ARE NOT THE ONLY PEOPLE INVOLVED IN THIS DECISION DISCUSSION. DIVISION AND BRIGADE STAFF PLANNERS CAN

EAVESDROP AND ARE ABLE TO PRODUCE, IN NEAR SIMULTANEOUS TIME, THE ORDERS AND GRAPHICS FOR THE OPERATION.

(X) THIS TECHNOLOGY IS STARTLING, TRULY AMAZING, AND IN THE HANDS OF THE 4TH ID TODAY. BUT WHAT IS TRULY REMARKABLE IS THAT IN THE NEAR FUTURE, THESE TYPES OF EXCHANGES WILL NOT SIMPLY OCCUR BETWEEN DIVISION COMMANDERS AND BRIGADE COMMANDERS,

(X) BUT COULD WELL EXTEND ALL THE WAY DOWN TO PLATOON LEADERS TALKING TO SQUAD LEADERS.

(X) SO HOW DO WE TRAIN LEADERS AND UNITS TO USE THIS EQUIPMENT? LET'S START BY TAKING A LOOK AT YESTERDAY'S TRAINING PARADIGM. ALL OF US PARTICIPATED IN LARGE SCALE MANEUVER EXERCISES SUCH AS REFORGER. LIVE TRAINING DOMINATED, WITH ONLY LIMITED AUGMENTATION FROM CONSTRUCTIVE SIMULATIONS AT HIGHER HEADQUARTERS. OUR VIRTUAL SIMULATORS WERE STAND-ALONE SYSTEMS SUCH AS THE UNIT CONDUCT OF FIRE TRAINER FOR OUR TANK CREWS AND SIMNET. FINALLY, WE HAD PERMISSIVE RESOURCES WHICH ALLOWED US TO CONDUCT A LOT OF LIVE TRAINING.

(X) TODAY'S TRAINING IS MUCH MORE CONSTRAINED BY RESOURCES. WE ARE FORCED TO LOOK FOR WAYS TO TRAIN SMARTER AT LESS COST. ONE

OF THE WAYS THAT WE ARE DOING THIS IS BY USING VIRTUAL SUBSTITUTES FOR LIVE WHEREVER POSSIBLE. OUR VIRTUAL DEVICES ARE NO LONGER STAND-ALONE, BUT CAN BE LINKED TOGETHER WITH MULTIPLE CREWS AND UNITS TRAINING ON THE SAME VIRTUAL BATTLEFIELD. WE HAVE REDUCED LIVE TRAINING EVENTS AT DIVISION LEVEL AND ABOVE AND SUBSTITUTED CONSTRUCTIVE SIMULATION WITH THE ADDED BENEFIT OF INCREASED RIGOR IN STAFF TRAINING. WE CAN CRANK UP THE TEMPO OF OPERATIONS IN THE CONSTRUCTIVE WORLD, OR STOP AND RERUN A BATTLE SEQUENCE BASED ON THE TRAINING LEVEL OF OUR PARTICIPANTS.

(X) AND WHAT DOES THE FUTURE HOLD? WE SEE A NEW FOUNDATION WITH THE INSTITUTIONAL TRAINING WORLD RELYING HEAVILY ON DISTANCE LEARNING. WE SEE WAYS TO INTERTWINE THE CONSTRUCTIVE, VIRTUAL, AND LIVE TRAINING WORLDS. THE RESULT WILL BE MORE EFFECTIVE USE OF OUR LIVE TRAINING THROUGH THE CREATION OF VIRTUAL VETERANS. THIS MERGING WILL ALSO RESULT IN REDUCED OPTEMPO AND RESOURCE SAVINGS. NOW DON'T GET ME WRONG, THERE ARE SOME LIVE TRAINING ABSOLUTES. NO ONE EVER PUT A BAYONET STUD ON A COMPUTER.

(X) THE CONSTRUCTIVE WORLD WILL ALLOW UNITS TO DIAL UP OUR WORLD CLASS OPFOR AT FORT LEAVENWORTH. PORTRAYED HERE ON THE SCREEN ARE THOSE SOLDIERS -- A THINKING, MOTIVATED ENEMY CAPABLE OF INDEPENDENT ACTION AND SURPRISE.

(X) SIMULTANEOUSLY, SOLDIERS IN VIRTUAL SIMULATORS SUCH AS THIS VIRTUAL HELICOPTER WILL ENGAGE THIS SAME ENEMY ALONG WITH THEIR GROUND ELEMENTS. WHEN A SOLDIER DESTROYS A SYSTEM IN THE VIRTUAL WORLD, THAT RESULT WILL ALSO OCCUR IN THE CONSTRUCTIVE WORLD IN A SEAMLESS LINKED FASHION.

(X) FINALLY, LIVE TRAINING WILL BE TIED TO THE CONSTRUCTIVE AND VIRTUAL ENVIRONMENTS IN A SIMILAR FASHION. THE BATTLE WILL APPEAR ON THE VEHICLE COMMANDER'S FBCB2 SCREEN AS HE FIGHTS IN THE LIVE PORTION OF THE ENVIRONMENT. WHILE THE FILM SHOWS ACTUAL MANEUVER, THE VEHICLE COMMANDER COULD BE SITTING IN HIS MOTOR POOL FIGHTING THE BATTLE IN A CONSTRUCTIVE MANNER ON THE SAME FBCB2 SCREEN.

(X) THIS IS OUR FUTURE. CONSTRUCTIVE, VIRTUAL, AND LIVE. WE WILL DO THIS AS PART OF THE CULMINATING EXERCISE FOR THE ARMY'S FIRST DIGITAL DIVISION IN 2001. AFTER THAT WE WILL MOVE TO PUT THE REST OF THE ARMY INTO THIS NEW TRAINING PARADIGM. BUT WHAT ABOUT THE DEEPER FUTURE? WHAT WILL THE CHALLENGES BE IN THE ARMY AFTER NEXT?

(X) TOMORROW'S BATTLEFIELD WILL BE SIGNIFICANTLY DIFFERENT. BECAUSE IT WILL BE GEOMETRICALLY LARGER AND DUE TO THE TECHNOLOGIES IN PLACE, OPERATIONAL TIMING WILL BE GREATLY COMPRESSED. JOINTNESS WILL MOVE TO INTERDEPENDENCE. WE MUST BE MENTALLY AND PHYSICALLY AGILE IN ORDER TO DO OUR JOBS. WE INTEND TO USE KNOWLEDGE TO EXPLOIT SPEED.

(X) WHAT IS BEING PORTRAYED IN AN OBJECTIVE SOMEWHERE. NOTICE THE SPEED OF THESE SYSTEMS. DON'T WORRY ABOUT WHAT THEY ARE. WE'LL SORT THAT OUT AS WE GET CLOSER. IN ONE OF THE WAREHOUSES ON THE COMPOUND, SENSITIVE MATERIALS OF SOME KIND ARE STORED. OUR MISSION IS TO FIND THE MATERIALS AND RENDER THE FACILITY INEFFECTIVE.

(X) MILITARY OPERATIONS IN COMPLEX TERRAIN WILL BE FACILITATED BY TECHNOLOGIES OF THE FUTURE. NOTE THE RELEASE OF A HAND HELD UAV WHICH MOVES INTO A WAREHOUSE ON THE AIRFIELD COMPOUND.

(X) THE GREAT GRANDSON OF FBCB2 MAY WELL BE A HEADS-UP DISPLAY ON THE SOLDIER'S HELMET VISOR. ON HIS VISOR HE SEES THE STATUS OF HIS PLATOON, HIS DIRECTION, AZIMUTH, AND LOCATION, AS WELL AS WHAT THE UAV SEES. SO HE IS ABLE TO SEE THE PATHWAY OF THE UAV AND MOST IMPORTANT TO HIM, THE TARGETS AS THEY ARE IDENTIFIED.

(X)

(X)

(X) LEADERS IN 2025 MUST POSSESS EXPERIENCE AND EXPERTISE -- THEY MUST BE COMPETENT. THEY MUST BE COMFORTABLE WITH UNCERTAINTY AND AT EASE WITH RESPONSIBILITY. LOOK AROUND YOU. THEY ARE IN THE FORCE TODAY. AND WE'RE GOING TO MAKE SURE THEY STAY THIS WAY -- BY PUTTING THEM THROUGH REPETITIVE, REALISTIC TRAINING AT EVERY LEVEL. WE'RE GOING TO GROW THEM TO BE THE BEST THAT THEY CAN BE. GROUNDED IN THE ARMY'S VALUES AND PROUD OF THEIR LIFE'S CALLING.

(X) (X)